

## CLAIMS

- 1        1. A chemical-analysis system comprising:  
2            a longitudinally extending primary separation channel; and  
3            plural pumps, said pumps being in fluid communication with  
4            said channel via respective conduits, said conduits being  
5            longitudinally distributed along said channel, each of said conduits  
6            extending more transversely than longitudinally, said pumps having  
7            respective exit nozzles, each of said pumps being adapted for  
8            extracting fluid from said channel into said pump via its respective  
9            conduit and for expelling fluid from said pump via its respective  
10          nozzle.
- 1        2. A chemical-analysis system as recited in Claim 1 further  
2            comprising means for parallel analysis of fluids expelled  
3            concurrently from respective pumps.
- 1        3. A chemical-analysis system as recited in Claim 1 further  
2            comprising plural secondary separation channels, each of which is  
3            arranged to receive fluid expelled from a respective one of said  
4            pumps.
- 1        4. A chemical-analysis system as recited in Claim 1 wherein each  
2            of said pumps has a piezo-electric drive element that can be used in  
3            expelling fluid.
- 1        5. A chemical-analysis system as recited in Claim 1 wherein said  
2            primary separation channel employs iso-electric focusing.
- 1        6. A chemical-analysis system as recited in Claim 1 wherein each  
2            of said pumps causes fluid expelled thereby to form into a jet upon  
3            exiting a respective nozzle.

1        7. A chemical-analysis system as recited in Claim 6 further  
2 comprising means for moving a collection medium relative to said  
3 pumps for providing a two-dimensional time-vs-channel-location  
4 distribution of said sample components.

1        8. A chemical-analysis system as recited in Claim 7 wherein said  
2 collection medium is a solid substrate and said distribution  
3 constitutes a microarray.

1        9. A chemical-analysis system as recited in Claim 8 wherein said  
2 solid substrate is a MALDI plate.

1        10. A chemical-analysis method comprising:  
2            separating sample components along a longitudinally-extending  
3 primary separation channel; and  
4            concurrently transversely pumping fluid from at least two  
5 discrete longitudinally-separated locations along said channel so  
6 that said fluid is extracted transversely into a pump and then  
7 expelled from said pump through a nozzle.

1        11. A chemical-analysis method as recited in Claim 10 further  
2 comprising subjecting fluids expelled from said at least two discrete  
3 longitudinally-separated locations to concurrent parallel respective  
4 analyses.

1        12. A chemical-analysis method as recited in Claim 10 further  
2 comprising, after said pumping, separating components of fluid  
3 expelled from each of said pumps using a respective secondary  
4 separation channel.

1        13. A chemical-analysis method as recited in Claim 10 wherein  
2 said pumping involves activating piezo-electric drive elements.

1        14. A chemical-analysis method as recited in Claim 10 wherein  
2        said separating involves iso-electric focusing.

1        15. A chemical-analysis method as recited in Claim 14 further  
2        comprising:

3        shifting a pH gradient in said primary separation channel; and  
4        transversely pumping fluid from at least one location along said  
5        channel so that said fluid is extracted transversely into a pump and  
6        then expelled from said pump through a nozzle.

1        16. A chemical-analysis method as recited in Claim 10 wherein,  
2        said pumping expels fluid in the form of jets.

1        17. A chemical-analysis method as recited in Claim 16 further  
2        comprising collecting fluid expelled in the form of jets on a  
3        collection medium moving relative to said jets to yield a two-  
4        dimensional time-vs-separation-location distribution of said  
5        components.

1        18. A chemical-analysis method as recited in Claim 17 wherein  
2        said collection medium is a solid substrate and said distribution is a  
3        microarray.

1        19. A chemical-analysis method as recited in Claim 18 wherein  
2        said solid substrate is a MALDI plate.